Perceived informal learning work contexts of auditors'

Michelle M. Kusaila
Central Connecticut State University

ABSTRACT

The purpose of this quantitative cross-sectional survey was to examine the impact of auditors' perceptions of informal workplace learning contexts on the auditing profession using a perceived organizational support lens. Multiple linear regression was used to examine the impact of informal learning on auditors' perceived organizational engagement and performance. Data suggests access to work resources such as time and technology are components to both employee engagement and performance. Support from those above you aids in employee performance while a supportive organizational culture keeps auditors engaged in supporting their informal learning activities. Longer professional tenure leads to greater performance and engagement in informal learning activities suggesting those in the profession longer value learning as part of their career progression. This study makes a unique contribution to the auditing literature on which organizational components support informal workplace learning in the accounting profession.

Keywords: Auditing, Informal learning, Organizational Support, Engagement, Performance

INTRODUCTION

In today's globalized organization, employees' workplace learning is central to the organization's competitive advantage. In 2012, $164.2 billion was spent by U.S. organizations on formal learning, but estimates show that formal learning accounts for approximately 25% of learning in organizations (Noe, Clarke, & Klein, 2014). To stay current with today's organizational demands, professionals need to be motivated to continually further their own skill sets. Changes in the workplace are rapid and continual, which creates challenges for traditional, formal learning (Ellinger, 2005; Inanc, Zhou, Gallie, Felstead, & Green, 2015). Formal training cannot keep up as it becomes nearly impossible to follow the need for learning and development activities (Eraut, 2004). The auditing profession values its people as its greatest asset (Center for Audit Quality, 2015). Each of the big four accounting firms agrees the accounting and auditing profession is in a period of innovation that requires professionals of all levels to adopt new skills in response to continuous changes. Formal training does not adapt as quickly to job responsibility shifts in the profession. Organizations are looking for adaptable people who can keep pace with the quickly changing world and organization (PricewaterhouseCoopers, 2015). Understanding the perceived impact of informal learning in the public accounting organization will help to understand better how professionals adapt and respond to rapid and continual change in the workplace.

This paper will look at the perceived relationship of informal learning work contexts with employee organizational engagement and performance in the context of auditing professionals using multiple linear regression. In a cross-sectional survey of 92 audit professionals, this study fills the literature gap on how employees perceive informal learning activities impact their job performance and engagement. Results confirm access to resources such as time and technology are key, and more professional experience leads to a greater impact on employee perceived job performing and engagement. Also, it is those in supervisor positions that aid in employee performance while a supportive organizational culture keeps employees engaged in supporting their professional on the job learning.

LITERATURE REVIEW

On the job learning or informal learning as known in the human management resource literature has been cited as a key aspect integrated into the pyramid structure of public accounting to facilitate knowledge transfer (Andiola, 2014; Earley, 2001; Watkins & Cervero, 2000; Westermann, Bedard, & Earley, 2015). While CPA's are required by the ACIPA to obtain formal continuing education past research has asserted that the profession is changing at a pace that cannot keep current with formal continuing education requirements (Center for Audit Quality, 2015; Deloitte, 2015; Ernst and Young, 2015; Forbes Insights, 2015; PricewaterhouseCoopers, 2015). While informal learning is an important component of practicing auditors' evolution, it is not an either-or proposition in contrast to formal learning. Billett (2013) stresses that participating in informal learning activities alone may not be sufficient to sustain knowledge acquisition as bad traits can be reinforced, a known negative effect of informal learning. Consistent with Schön (1983), reinforcement of the learning of ineffective behaviors is a downfall of workplace learning, on the job learning through trial and error and self-reinforcement methods. New knowledge is not solely created through everyday experiences but is rather a complex mix of experiences both formal and informal.

Informal Learning

Marsick and Watkins (2015) offer a theory of learning in organizations. While the theory and definition of informal learning are varied in the literature, each shares a balance between action and reflection, where formal learning is based more on reflection than action. Informal learning is prompted at the individual level by a desire to learn and perceived organizational support is how employees perceive the organization to positively or negatively values and support their contributions to the greater organizational success/goals (Eisenberger, Huntington, Hutchison, and Sowa, 1986). Perceived organizational support highlights the role of employer commitment in exchanges with the employee. Employees' increased sense of contributing positively to organizational goals is linked to increased identification with the organization and thus improved performance (Eisenberger et al., 1986). The training efforts and resources spent on employee informal learning and support of employee informal learning growth viewed from a perceived organizational support theoretical lens.

Performance and Engagement

The first meta-analysis on informal learning confirmed the positive association between engaging in informal learning activities and knowledge-skill acquisition and performance (Cerasoli et al., 2017). Engagement is measured by employee's perceived pride and commitment to their employer organization, while performance is one having the knowledge and skills to exceed the standard for one's role. Maringka (2013) identified peer support being the only independent variable showing a relationship between informal learning and performance consistent with De Grip (2015). Coelho, Rodrigues, Fogaca, Teixeira, and Richter (2017) found a strong relationship between management support and employee performance in a study of employees at a Brazilian organization.

In the public accounting organizational context to date, there are two recent quantitative studies on informal learning Salleh et al., (2012) and Lindsay (2013). Salleh et al. (2012) assert the combining of job training and learning opportunities and one factor because "accountants view job training as learning opportunities made available to them" (p. 435). Research in the auditing profession finds, "basic declarative knowledge is commonly acquired through formal education, and procedural knowledge is acquired later during one's professional career" (Bonner & Walker, 1994, p. 159).

Informal Learning Work Contexts

Consistent with the literature on feedback seeking behavior support attributes can be aggregated or bifurcated by supervisor feedback and peer feedback sources (Anseel, Beatty, Shen, Lievens, and Sackett, 2015) this paper segregated supervisor and peer support variables. In regards to supervisor support Anseel, Beatty, Shen, Lievens, and Sackett (2015) note that high-quality relationships are positively related to feedback seeking behavior. The supervisor in an audit firm acts as a mentor/coach to novice professionals by responding to questions and reviewing and providing feedback on each engagement (Earley, 2001, Westerman et al., 2015). Those with more experience supervise less experienced team members, so there is constant feedback for everyone from the partner down (Deloitte, 2015; International Federation of

Accountants, 2014). Anseel et al., (2015) found older, more experienced employees do not perceive the value of feedback as high.

Kadous et al. (2013) found a strong social bond between peers those at the same rank/title and informal advice justification. De Grip (2105) found "knowledge spillovers between peers […] contribute to firm productivity" (p. 1) using human capital theory, a theory based on firms investments in formal education and training. This conflicts with Schaefer (2013) where audit seniors are less likely to seek knowledge laterally due to social costs. Van Noy, James, and Bedley (2016) concur with this idea that mentoring is less effective the closer in a hierarchical organizational level, but peer to peer learning is productive to employees. Results on peer support are conflicting across studies within the accounting profession.

Public accounting firms foster "a strong culture of learning and support for learning" (Watkins & Cervero, 2000, p. 3). Eruat (2004) noting a positive culture of support and feedback affects learning positively. The same conclusions were drawn by Caruso (2017) in regards to promoting knowledge sharing and Wahab, Saad, and Samsdin (2016) in a case study of five chartered accountants where lack of support from others hindered participation in informal learning activities. Deloitte (2015) embodies an atmosphere conducive to professional development both formally and informally. Offering over 767,000 hours of formal training their continuing professional requirements are "supplemented with on the job learning" (p. 15). Firms have a societal obligation to meet organizational changes to ensure they are providing effective oversight of capital markets and protecting investors interests and do so by providing their employees access to work resources including time and technology.

Work resources include time and technology. To date, there is little research on work resources and informal learning, but the parent study found no significant relationship between access to work resources and informal learning as measured by engagement and performance. Wahab et al. (2016) identified a lack of time, as key reason accountants wouldn't participate in informal learning activities. This study will add to the limited research in this area.

Previously, informal learning was hard to measure in an organizational context, but recent researchers have developed a variety of instruments to identify and measure conditions and outcomes for informal learning while taking into account the complex nature of the learning. Given the importance of context on informal learning, replicating the instrument developed and validated by Maringka (2013) in a particular organizational context, public accounting, would extend the work from a general business population to a specific population ripe with informal learning opportunities embedded in the organizational context. This study assumed that professional auditors practicing in the public auditing profession participate in informal learning activities that impact on the job learning for continued improvement. Past researchers have identified the profession as a rich learning environment and structurally organized for informal learning (Watkins & Cervero, 2000; Earley, 2001; Westermann, Bedard, & Earley, 2015).

To learn more about the relationships of perceived informal learning work contexts the study focused on two research questions:

Research Question 1: What is the relationship between perceived informal learning work contexts with perceived organizational engagement?

Research Question 2: What is the relationship between perceived informal learning work contexts with perceived employee performance?

METHODOLOGY

An online survey was used to answer the research questions. Marinka (2013) developed and validated an instrument for measuring the impact of informal learning activities from an employee perspective using attributes found in previous literature.

Participants were recruited via LinkedIn in July of 2017. The participant pool included practicing audit professionals from primary contacts working in the profession. An initial posting with 364 connections at the time. Analytics provided by Linkedin showed 187 views of the original posting. A follow-up post two weeks later showed 124 views of the follow up posting. There were a total of 120 responses, and of those 92 were usable responses. The 28 unusable answers were either incomplete or not from the target population. The response rate was 39% using total views; using total connections; the response rate was 33%. The higher connection response rate is the result of not a 1:1 preview ratio and overlap in views of the two requests. The total usable sample size of 92 is acceptable for a medium effect using seven independent variables.

There were slightly more male (50%) than female (45%) participants. The average age of participants was 33.51 years old, with an average professional tenure of 7.69 years (tenure ranged from 35 years to approximately one year). Of this, 53% of responses were from staff/seniors, and 41% were from participants in a manager and-or leadership role. 26% of the responses were from big four employees, and 20% were from firms with less than 16 audit partners.

The dependent variable is the mean score for engagement and performance, respectively from various subsets of Likert scale questions, using a scale of one (strongly disagree) to five (strongly agree). The four independent variables are the mean scores on responses from the ILWC survey for the four informal learning work contexts (management support, peer support, supportive organizational culture, and access to work resources. The method of variable input was simultaneously otherwise known as forced entry consistent with Marignka (2013). This method relies on theoretical reason from previous literature for variable input.

To address the statistical regression concerns, participants were given the same instructions written in plain, clear English that mirror the original study (Marignka, 2013). Maturation was not a concern, as the instrument took less than 15 minutes to complete and on average took 6 minutes 37 seconds to complete. There was no decreased fatigue. This should be the same for experimental mortality. All participants selected received the same email with the same instructions and instrument. Participants were given assurance that their responses were voluntary and confidential. The researcher received approval by their Institutional Review Board.

Two multiple regressions were run to predict relationships between the dependent variables engagement and performance on the four independent variables and three demographic control variables gender, firm size, and tenure years. In checking the assumptions, there was linearity as assessed by partial regression plots and a plot of studentized residuals against the predicted values. There was not homoscedasticity, as assessed by visual inspection of a plot of studentized residuals versus unstandardized predicted values. The scatterplot showed funneling indicating heteroscedasticity. However, there was the independence of residuals, as assessed by a Durbin-Watson static of 1.954 (RQ1) and 1.680 (RQ2) within the recommended boundaries of one to three suggesting errors are reasonably independent. To address heteroscedasticity bootstrapping was performed with 95% bias-corrected and accelerated confidence intervals

based on 1,000 bootstrap samples. There was minimal change in results; therefore, results are presented without bootstrapping. There was no evidence of multicollinearity, as assessed by variance inflation factor values less than three. There were no studentized deleted residual greater than +/- 3 standard deviations (RQ1) there were two studentized deleted residuals greater than +/- 3 standard deviations (RQ2). No leverage values greater than 0, and values for Cook's distance above 1. The assumption of normality was met, as assessed by a P-P Plot.

RESULTS

Mean, standard deviation, and median scores were developed for each of the four independent variables and two dependent variables from responses to Likert-type scaled questions that were ordinal in scale as indicated in Table 1 (Appendix). Table 1 also includes central tendency variables for the independent demographic variable tenure years. Firm size and gender were not included because they are dichotomous variables. By computing the mean of each item to derive a continuous scale, the multiple regression assumption of measurement for each of these constructs was met. The range of possible scores for each was 1.0 to 5.0, with higher scores indicating greater perceptions of engagement and performance of informal learning at work. There was a total of 28 items to measure the four independent variables, seven questions per variable; five questions each for both engagement and performance.

Pearson's product moment correlation was performed to compare associations between 11 variables. Each of the main independent and dependent variables had a strong direct positive correlation. This indicated that when scores for the variables increased the corresponding variables also increased. Also, gender and firm size had a medium direct negative correlation with both engagement and performance indicating there was an inverse relationship between these variables. Tenure years were strongly and directly correlated with age ($r = .805$, $p < .001$), indicating a close relationship between variables; therefore only tenure years were included in the regression models. Also, an additional variable of an even split of early-late respondents was looked at there were no differences between those who responded to later requests from early responses. Results of the correlational analysis are presented in Table 2 (Appendix).

Research Question 1

The multiple regression model statistically significantly predicted engagement, $F(7, 84 = 16.652$, $p < .001$, $R^2 = .581$ (.546 adjusted). The adjusted R-square value of .546 indicates that approximately 54.6% of the variability in the dependent variable informal learning on engagement did predict the seven independent variables in the model. The independent variable supportive organizational culture added statistically significantly to the prediction, $p < .05$. The independent variables access to work resources and tenure years both added statistically significantly to the prediction, $p < .01$. The positive values do not cross zero adding strength to the conclusion that a significant positive relationship exists. Regression coefficients, confidence intervals, and standard errors as indicated in Table 3 (Appendix).

Research Question 2

The multiple regression model statistically significantly predicted performance, $F(7,82 = 7.763$, $p < .001$, $R^2 = .399$ (.347 adjusted). The adjusted R-square value of .347 indicates that

approximately 34.7% of the variability in the dependent variable informal learning on performance was predicted by the seven independent variables in the model. The independent variable tenure years added statistically significantly to the prediction, $p < .05$. The independent variables management support and access to work resources added statistically significantly to the prediction, $p < .01$. The bootstrap positive values do not cross zero adding strength to the conclusion that a significant positive relationship exists. Regression coefficients, confidence intervals, and standard errors as indicated in Table 4 (Appendix). Both multiple regression models statistically significantly predicted the dependent variables. Therefore the answers to each of the research questions are yes.

DISCUSSION

While the variable peer support has been significant in previous literature, it was not in this study. Kadous et al. (2013) and De Grip (2015) found positive relationships between peer supports using human capital theory, but Schaefer's (2013) findings conflicted these two studies. Specifically, Schaefer found that audit seniors in big four firms are less likely to seek peer support because of social costs. Results of this study are not significant for peer support for either of the dependent variables nor are there any correlations between peer support and firm size. This indicates that auditors are less likely to seek peer support for informal learning activities regardless of firm size.

Auditing firms depend on the working paper review process to provide supervisor review and feedback to less experienced auditors. While audit seniors have been found to seek knowledge upwards (Schaefer, 2013), the importance of performance feedback to developing and improving auditors' knowledge and thus audit quality has (Andiola, 2014). This study also found a significant positive relationship between management support and performance. Prior studies showed that high-quality supervisor support relationships are positively related to feedback-seeking behavior (Anseel et al., 2015). While my findings confirmed the relationship of management support and performance, the quality and sequencing of the relationship and feedback process were not measured.

Access to work resources including time and technology was significant in both engagement and performance. To date, there is little research on work resources and informal learning. Maringka (2013) found no significant relationships between access to work resources and both engagement and performance in a general business setting. This study filled the literature gap given the findings that access to work resources was significant in both models, on engagement and performance variables for audit professionals. Wahab et al. (2016) asserted that lack of time is a key reason accountant would not participate in informal learning activities, but Lindsay (2013) offered a contradictory view by asserting accountants want to learn for themselves and are self-motivated to do so.

A supportive organizational culture was significant to the engagement variable. This is consistent with Watkins and Cervero (2000) findings that public accounting firms foster "a strong culture of learning and support for learning" (p. 3). Eruat (2004), Caruso (2017), Maringka (2013), and Wahab et al. (2016) found no relationship between supportive organizational culture and performance, the inverse of the results of this study. Also of note, Liliana et al. (2013) found a difference in organizational culture when looking at big four and non-big four demographic variables: such differences were not evident in this study. Tenure years variances in both performance and engagement variables were the only significant

demographic variable, suggesting more professional experience leads to better self-perceived performance and engagement in regards to informal organizational learning. Gender and firm size did not have any significance in any of the multiple regression models.

Recommendations for future studies include testing the instrument in other geographical areas to look for consistency across locations. Another recommendation includes testing the instrument in the internal audit population to identify differences between internal and external auditors. The internal auditing profession has a different organizational construct. Additional researchers could also extend the frequency variable that had previously shown low internal consistency (Marinka, 2013), aggregating a count of the hours auditing professionals spend on informal learning activities extending the work of Lindsay (2013).

CONCLUSION

This problem addressed in this study is how employees perceive informal workplace learning activities support in the accounting profession is not well understood. This study addressed this problem by looking at what informal learning variables support employee performance and engagement in accounting organization. There is a variety of on the job or informal learning that takes place in the audit profession; advances in this area benefit practice and the literature include opening the black box of learning patterns in the public accounting profession.

This study fills the literature gap on which organizational components support workplace informal learning in the accounting profession. Access to time and resources such as time and technology are key components to both employee engagement and performance. Support from those above you aids in employee performance while a supportive organizational culture keeps employees engaged in supporting their informal learning activities. More professional experience leads to greater performance and engagement in informal learning activities suggesting those in the profession longer value learning as part of their career progression. Better-qualified auditors can help businesses achieve a stronger oversight system keeping up with ever-changing stakeholders' expectation. This study makes a unique contribution to the auditing literature and provides a foundation for future research that can help better understand the impact of informal learning on the audit profession.

Table 1

Measures of Central Tendency for Variables

Variable	*N*	*M*	*SD*	*Mdn*	Range
Management support	103	3.874	0.694	4.00	2.00-5.00
Peer support	103	4.130	0.565	4.20	2.17-5.00
Supportive organizational culture	103	3.775	0.580	3.70	1.57-5.00
Access to work resources	103	3.891	0.565	4.00	2.00-5.00
Performance Impact	103	4.144	0.585	4.00	2.00-5.00
Engagement Impact	103	4.027	0.833	4.00	1.40-5.00
Tenure years	92	7.692	8.892	4.00	1.67-35.00

Note: *N* = Number; *M* = Mean; *SD* = Standard Deviation; *Mdn* = Median; Variables used 1 = Strongly Disagree, 2 = Disagree, 3 - Neutral, 4 = Agree, 5 = Strongly Agree

Table 2

Correlations Between all Variables Used in Multiple Regression Analysis

Variable	1	2	3	4	5	6	7	8	9	10
1 Performance										
2 Engagement	.622***									
3 Peer support	.455***	.540***								
4 Management support	.520***	.521***	.757***							
5 Supportive organizational culture	.501***	.656***	.652***	.672***						
6 Access to work resources	.472***	.566***	.388***	.401***	.618***					
7 Gender	-.063	-.261	-.022	-.036	-.135	-.258*				
8 Firm size	-.096	-.121	.034	.028	-.078	-0.048	-.070			
9 Age	.152	.147	-.289**	-.380***	-.044	.153	-.075	-.138		
10 Tenure years	.193	.211	-.120	-.286**	.066	.244*	-.086	-.119	.805***	
11 Early	.125	.063	.059	.050	.004	-.038	-.023	-.039	-.077	-.078

Note: *p<.05 (2-sided test); **p<.01 (2-sided test), ***p<.001 (2-sided test), N = 102 for all variables except 8-10. Variables 8-10 N = 92.

* Correlation is significant at the 0.05 level (2-tailed).

** Correlation is significant at the 0.01 level (2-tailed).

*** Correlation is significant at the 0.001 level (2-tailed).

Table 3

Multiple Regression Analysis: Dependent Variable Engagement

	B	*SE B*	*β*	*Sig.*
Intercept	-0.558	0.540	---	---
	(-1.631, 0.516)			
Peer support	0.173	0.166	0.116	0.302
	(-0.158, 0.503)			
Management support	0.231	0.145	0.199	0.115
	(-0.057, 0.520)			
Supportive organizational culture	0.433	0.159	0.308	0.008**
	(0.118, 0.749)			
Access to work resources	0.349	0.135	0.241	0.011*
	(0.081, 0.617)			
Gender	-0.217	0.121	-0.133	0.076
	(-0.457, 0.024)			
Firm Size	-0.068	0.132	-0.037	0.606
	(-0.331, 0.194)			
Tenure Years	0.015	0.007	0.165	0.047*
	(0.000, 0.030)			
Model summary:				
F = 16.652, p <.001				
N = 92				
R^2 = .581				
Adjusted R^2 = .546				

Note: *p<.05, ** p<.01; B = unstandardized regression coefficient; SEb = Standard error of the coefficient; β = standardized coefficient; *Sig.* =Significance

Table 4

Multiple Regression Analysis: Dependent Variable Performance

Variable	*B*	*SE B*	*β*	*Sig.*
Intercept	1.741	0.417	---	---
	(0.912, 2.570)			
Peer support	0.075	0.126	0.081	0.551
	(-0.175, 0.326)			
Management support	0.300	0.110	0.411	0.008**
	(0.082, 0.518)			
Supportive organizational culture	0.011	0.120	0.013	0.926
	(-0.228, 0.250)			
Access to work resources	0.205	0.103	0.223	0.049**
	(0.095, 0.392)			
Gender	0.048	0.092	0.047	0.601
	(-0.135, 0.231)			
Firm Size	-0.090	0.100	-0.079	0.373
	(-0.288, 0.109)			
Tenure Years	0.015	0.006	0.262	0.010*
	(0.004, 0.026)			
Model summary:				
$F = 7.763$, p <.001				
$N = 89$				
$R^2 = .399$				
Adjusted $R^2 = .347$				

Note: *p<.05, **p<.01; B = unstandardized regression coefficient; SEb = Standard error of the coefficient; β = standardized coefficient; *Sig.*=Significance

REFERENCES

Andiola, L. M. (2014). Performance feedback in the audit environment: A review and synthesis of research on the behavioral effects. *Journal of Accounting Literature, 33*, 1-36. doi:10.1016/j.acclit.2014.07.001

Anseel, F., Beatty, A. S., Shen, W., Lievens, F., & Sackett, P. R. (2015). How are we doing after 30 years? A meta-analytic review of the antecedents and outcomes of feedback-seeking behavior. *Journal of Management*, *41*(1), 318-348. doi:10.1177 /0149206313484521

Billett, S., & Choy, S. (2013). Learning through work: Emerging perspectives and new challenges. *Journal of Workplace Learning*, *25*(4), 264-276. doi:10.1108 /13665621311316447

Bonner, S. E., & Walker, P. L. (1994). The effects of instruction and experience on the acquisition of auditing knowledge. *The Accounting Review, 69*(1), 157-178. Retrieved from http://www.jstor.org/stable/248265

Caruso, S. J. (2017). A foundation for understanding knowledge sharing: Organizational culture, informal workplace learning, performance support, and knowledge management. *Contemporary Issues in Education Research, 10*(1), 45-52. doi:10.19030/cier.v10i1.9879

Center for audit quality. (2015*). Public Company Auditing: A Path to a Dynamic, Purpose-Driven Career.* Retrieved from www.thecaq.org

Cerasoli, C. P., Alliger, G. M., Donsbach, J. S., Mathieu, J. E., Tannenbaum, S. I., & Orvis, K. A. (2017). Antecedents and outcomes of informal learning behaviors: A meta-analysis. *Journal of Business and Psychology*, 1-28. doi:10.1007 /s10869-017-9492-y

Coelho, F. A., Rodrigues, D. A., Fogaca, N., Teixeira, J. A., & Richter, L, D. D. (2017). Empirical relationships between support to informal learning, professional competences and human performance in a Brazilian public organization. *International Journal of Learning and Intellectual Capital, 14*(1), 90-108. doi:10.1504/IJLIC.2017.080658

De Grip, A. (2015). The importance of informal learning at work. *IZA World of Labor,* June, 1-10. doi:10.15185/izawol.162

Deloitte. (2015). *Audit of the future.* Retrieved from www2.deloitte.com

Earley, C. E. (2001). Knowledge acquisition in auditing: Training novice auditors to recognize cue relationships in real estate valuation. *The Accounting Review, 76*(1), 81-97. Retrieved from aaajournals.org/loi/accr

Eisenberger, R., Huntington, R., Hutchinson, S., & Sowa, D. (1986). Perceived organizational support. *Journal of Applied Psychology, 71,* 500-507. Retrieved from http://jap.physiology.org/

Ellinger, A. D. (2005). Contextual factors influencing informal learning in a workplace setting: The case of "reinventing itself" company. *Human Resource Development Quarterly, 16*(3), 389-415. doi:10.1002/hrdq.1145

Eraut, M. (2004). Informal learning in the workplace. *Studies in Continuing Education, 26*(2), 247-273. doi:10.1080/158037042000225245

Ernst and Young, LLP. (2015). *Big data and analytics in the audit process: mitigating risk and unlocking value.* New York, NY: Ernst & Young, LLP. Retrieved from: www.ey.com

Forbes Insights. (2015). *Forbes insights: Audit 2020: A focus on change.* Retrieved from: www.kpmg.com

International Federation of Accountants. (2014). *International Education Standard™ (IES™) 8: Professional Competence for Engagement Partners Responsible for Audits of Financial Statements (Revised).* Retrieved from www.ifac.org

Kadous, K., Leiby, J., & Peecher, M. E. (2013). How do auditors weight informal contrary advice? The joint influence of advisor social bond and advice justifiability. *Accounting Review, 88*(6), 2061-2087. doi:10.2308/accr-50529

Liliana, F. Niculae, F., & Mihaela, D. (2013). Study on the perception of the organizational performance in accounting and audit firms. *Economic Science Series, 22*(1), 1316-1323. Retrieved from anale.steconomiceuoradea.ro/en/

Lindsay, H. (2013). Patterns of learning in the accountancy profession: The role of continuing professional development and lifelong learning. *EdD thesis The Open University.* Retrieved from oro.open.ac.uk/

Maringka, J. F. (2013). Development and validation of an instrument to assess employees' perceptions of informal learning work context. Retrieved from the University of Minnesota Digital Conservancy, http://purl.umn.edu/158816.

Marsick, V. J. & Watkins, K. E. (2015). *Informal and incidental learning in the workplace.* New York, NY: Routledge.

Noe, R. A., Clarke, A. D., & Klein, H. J. (2014). Learning in the twenty-first-century workplace. *Annual Review Organizational Psychology Organizational Behavior*, *1*(1), 245-275. doi:10.1146/annurev-orgpsych-031413-091321

PricewaterhouseCoopers LLP. (2015). *Data driven: What students need to succeed in a rapidly*

Salleh, K., Chong, S. C., Ahmad, S. N. S., & Ikhsan, S. O. S. S. (2012). The extent of influence of learning factors on tacit knowledge sharing among public sector accountants. *VINE: The Journal of Information and Knowledge Management Systems, 43*(4), 424-441. doi:10.1108/VINE-06-2012-0021

Schaefer, T. J. (2013). *The effects of social costs and internal quality reviews on auditor consultation strategies.* (Doctoral dissertation). Retrieved from http://scholarcommons.sc.edu/etd/472

Schön, D. A. (1983). *The reflective practitioner: How professionals think in action*. New York, NY: Basic Books, Inc.

Van Noy, M., James, H., & Bedley, C. (2016). Reconceptualizing learning: a review of the literature on informal learning. Rutgers Education and employment research center, ACT foundation: Piscataway, NJ. Retrieved from actfdn.org/

Wahab, M. S. A., Saada, R. A. J., Amir, M., & Samsudina, M. (2016). Situational Inhibitors to Informal Learning in the Workplace: A Case Study of Accountants. *The European proceedings of social & behavioral sciences*. 25-31. doi:10.15405/epsbs.2016.08.5

Watkins, K. E., & Cervero, R. M. (2000). Organizations as contests for learning: A case study in certified public accountancy. *Journal of Workplace Learning, 12*(5), 187-194. doi:10.1108/13665620010336161

Westermann, K. D., Bedard, J. C., & Earley, C. E. (2015). Learning the "craft" of auditing: A dynamic view of auditors' on-the-job learning. *Contemporary Accounting Research, 32*(3), 864-896. doi:10.1111/1911-3846.12107